Interannual Polar Motion and its Geophysical Contributors

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Three independent polar motion excitation time series (IRIS series from 1980 to 1994, CSR series from 1976 to 1993, BIH series from 1962 to 1981) have been analyzed to investigate the nature of interannual polar motion. A multi-stage filter is applied to extract the components with period between 1.7 years to 10 years. 'I'he interannual variations of the excitation functions from these three time series demonstrate coherent common features, in particular the features after 1984 from IRIS and CSR series are in very good agreement. Thus we are inclined to deduce that these interannual variations of polar motion excitation are real signals with amplitudes of about 8 mas for χ_1 and about 15 mas for χ_2.

To explore the geophysical contributors to the interannual polar motion, we apply the same multi-stage filtering to atmospheric excitation function series from three agencies (NMC series from 1976 to present, JMA series from 1983 to present, ECMWF series from 1980 to present) and excitation series of terrestrial water storage from 1900 to 1985 [*Kuehne and Wilson, 1991].* Inverted barometer mode] is adopted to represent the oceanic response to surface air pressure variations. Comparisons will be presented.

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